



**7-8-9**  
**MAI** 2017

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**équipe**

MISONS  
**PCI**



# Is the Patient the Missing Link to Preventing Hospital-Acquired Infections (HAIs)?

Natalie Bruce, RN, BScN, MScN, CIC  
The Ottawa Hospital

**39<sup>es</sup> JOURNÉES SCIENTIFIQUES**

# Disclosures

- No conflicts of interest



# Objectives

- Review the evidence to support a patient centred hand hygiene (PCHH) program
- Discuss PCHH as patient-centred care
- Provide a glimpse into where PCHH is now
- Describe The Ottawa Hospital PCHH experience
- Discuss future considerations for PCHH



# Patient Centred Hand Hygiene

*“...is defined as hand hygiene practices performed by the patient on his or her own hands, including handwashing, use of alcohol-based hand rubs (ABHRs), and use of disinfection wipes. In certain situations, this care may need to be provided to patients by professional caregivers or family members.”*

Landers, T., Abusulum, S., Coty, M., Bingham, & Bingham, J. (2012). *American Journal of Infection Control.*



# Background

- Hand hygiene (HH) is considered the most important measure to prevent HAIs
- Attention has been paid to healthcare workers
- The patient may be the missing link



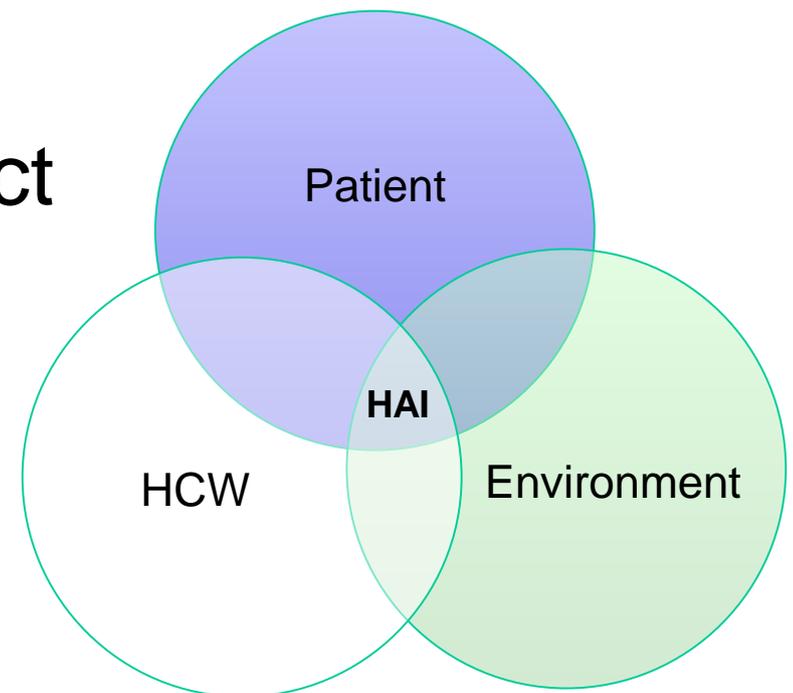
# The Patient Is An Important Source for Environmental Contamination

Authors	Results
Rutala (1983)	<ul style="list-style-type: none"><li>• First study to quantify the environmental contamination in MRSA positive patient room</li><li>• Increased MRSA surface contamination in infected vs colonized patients' rooms</li></ul>
Boyce (1997)	<ul style="list-style-type: none"><li>• 96/350 (27%) environmental cultures in MRSA patients' rooms were positive</li><li>• Environmental contamination was increased 6 fold when MRSA in urine and wound</li></ul>
Boyce (2007)	<ul style="list-style-type: none"><li>• 58.8% contaminated environment with patients with diarrhea compared to 23.3% controls</li></ul>
Chang (2009)	<ul style="list-style-type: none"><li>• MRSA positive patients' (colonized and infected) contaminate the environment (bed rails, tables, call buttons)</li></ul>
Livorsi (2015)	<ul style="list-style-type: none"><li>• Patients with high burden of MRSA in their nares are more likely to have a high burden of environmental contamination of MRSA in their rooms</li></ul>



# Our Assumptions

- HCWs' hands the main route of transmission
- The patient's own flora can contaminate the environment and be a source of transmission
- HAIs are often caused by endogenous source
- Patients can self inoculate from the environment and act as reservoir for contaminating



## **A Bundle Strategy Including Patient Hand Hygiene to Decrease *Clostridium difficile* Infections**

Marian Pokrywka, Jody Feigel, Barbara Douglas, Susan Grossberger,  
Amelia Hensler, and David Weber

MEDSURG Nursing,(2014), 23 (3);145-64.

### **Setting:**

- 520 -bed US Tertiary Care Teaching Hospital

### **Method:**

Pre and post intervention study

- Patient hand hygiene was added to a pre-existing *C. difficile* prevention bundle

### **Results:**

- *C. difficile* infection rate decreased from 10.45 to 6.95 per 10,000 patient days





Systematic patients' hand disinfection: impact on meticillin-resistant *Staphylococcus aureus* infection rates in a community hospital

D. Gagné, G. Bédard, P.J. Maziade\*

Centre Hospitalier Pierre Legardeur, Terrebonne, Québec, Canada

## Setting:

- 250-bed in a Quebec Community Hospital

## Method:

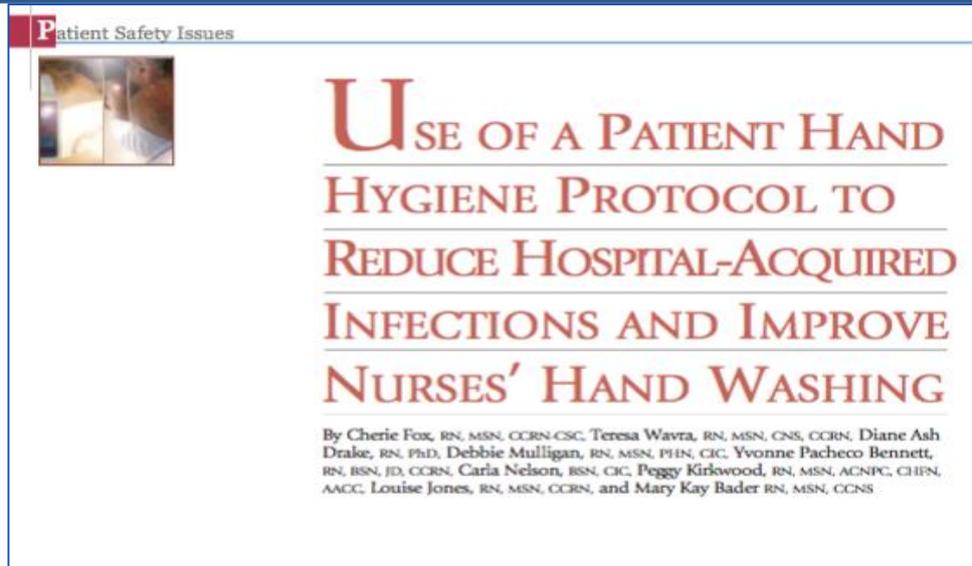
Pre and post intervention study

- All patients and families received education and patients' hands were cleaned twice a day for one year

## Results:

- 51% decrease in MRSA rates from 10.6 to 5.2 cases per 1000 patient-days





*.American Journal of Critical Care;2015; 24(3):216-24.*

### **Setting:**

- US Cardiovascular medical ICU in a 498 bed community hospital.

### **Method:**

- Pre-experimental study design to decrease CLABSI and CAUTI infections
- Nurse applied CHG wipes 3x day on patient hands

### **Results:**

- 96.5% of patient hand hygiene sustained
- CLABSI rate decreased from 1.1 to 0.50 per 1000 line days
- CAUTI rate decreased from 9.1 to 5.6 per 1000 catheter days
- Unit staff HH mean rate increased from 35% 66%





Review

## Interventions to improve patient hand hygiene: a systematic review

J.A. Srigley<sup>a,b,\*</sup>, C.D. Furness<sup>c,d</sup>, M. Gardam<sup>e,f</sup>

### First Systematic Review of Evidence of Patient Hand Hygiene Interventions:

- 10 studies met eligibility criteria
  - 6 resulted in decrease HAIs
  - 4 reported in improved patient hand hygiene rates

### Results:

- “Interventions to improve patient hand hygiene may reduce the incidence of HAIs, and improve compliance but the quality of evidence is low”
  - Stronger designs
  - Selective in choice of outcomes
- PCHH may be as important as HCW hand hygiene in preventing transmission



# Patient Hand Hygiene Is Patient Centred Care

- Patient centred care is now a standard of care
- Patients included in safety initiatives mitigate risk and improve patient safety
- Patients have played a role in improving HCWs' HH by acting as auditor and monitor
- PCHH programs empower the patient to participate in safety and put the patient in the center of care



# Baseline Patient Hand Hygiene Rates

Source	Auditing Process	Setting	Rate
Luz (2011)	observational	Emergency Department USA	<ul style="list-style-type: none"> <li>• 13 %after bedpan use</li> </ul>
Srigley (2014)	Real-time locations systems	Multi-organ Transplant Unit Canada	<ul style="list-style-type: none"> <li>• 39.1% before meals</li> <li>• 2.9%% entry to room</li> <li>• 6.7% exit from room</li> </ul>
Cheng (2016)	observational	Academic Health Science Centre Medicine/surgery Units China	<ul style="list-style-type: none"> <li>• 26.9% before meals</li> <li>• 27.5 % after bedpan/urinal use</li> <li>• 89.7% after washroom</li> </ul>



# My Hospital Experience

- No corporate program existed to engage and educate patients on the importance of HH
- ABHR not readily available for patients
- No data available to determine patients' attitudes and behaviour
- Limited literature related to patient-centred HH and no BPGs defining the patient moments of HH



# Background

## 2013: Top Ten TOH Great Ideas

- started out too big (4 units, 2 campuses)
- caught in the details
- measured too long after the intervention
- too small a team (IPAC and Nursing)

### 7 Educate patients to wash their hands

#### What's the Big Idea?

Patients have a new line of defence against the spread of infections: themselves. Since May, A5, 7East, 6Northwest and Infection Control have been working together to create the patient hand-hygiene educational program called "It's simple! Stay safe, wash your hands." Posters are already in patient rooms, signs are on Purell dispensers and an information sheet is given with admission packages.

#### What's the impact on patients?

Teaching patients when they should wash their hands empowers them to play an active role in their care and decreases the spread of hospital-acquired infections.

#### Why should you care?

Hand hygiene is the most effective way to prevent hospital-acquired infections. Therefore, if patients adequately wash their hands, they not only protect themselves, but also you and other patients.

“It's the missing link because we haven't educated patients to the level we've educated staff.”

« C'est le chaînon manquant parce que nous avons moins renseigné les patients que notre personnel. »  
Sheryl McClurman

### 7 Enseigner aux patients à se laver les mains

#### Quelle est la grande idée?

Les patients ont une nouvelle ligne de défense contre les infections : eux-mêmes. Depuis mai, les équipes des unités A5, 7 Est, 6 Nord-Ouest et du contrôle des infections travaillent à l'élaboration du programme d'hygiène des mains destiné aux patients appelé « C'est simple! Protégez-vous. Lavez-vous les mains! » Des affiches sont déjà installées dans les chambres des patients et sur les distributeurs de Purell. L'information fait aussi partie de la trousse d'admission.

#### Quels sont les effets sur les patients?

Enseigner aux patients quand ils devraient se laver les mains leur permet de participer activement à leurs soins et de diminuer les taux d'infection à l'hôpital.

#### Pourquoi est-ce important?

Se laver les mains est le moyen le plus efficace de prévenir les infections à l'hôpital. Lorsque les patients se lavent bien les mains, non seulement ils se protègent, mais ils protègent aussi les autres patients et notre personnel.

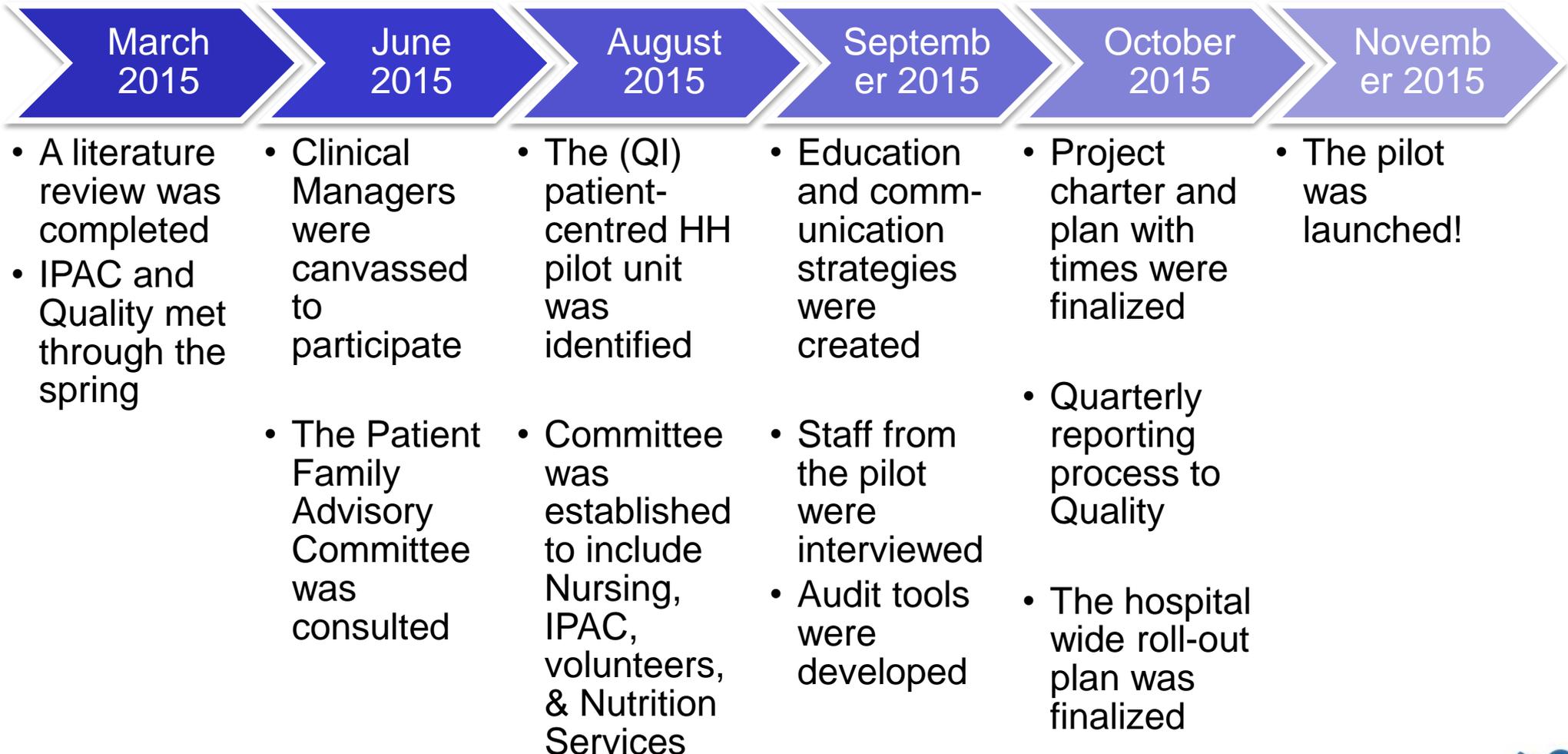


## 2014:

- Decreased the pilot size
- Diversified team
- Unable to focus on PCHH(Ebola)



# 2015 Planning Phase and Time Line



# PCHH Program

Expected outcomes:

All patients:

- Will have access to alcohol based hand rub
- Will have received education about the importance of hand hygiene
- Will be encouraged to perform hand hygiene at the appropriate times



# TOH Four Moments of Patient Hand Hygiene

The Four moments of patient HH were created

- Before meals
- Before medications
- After using the washroom
- When entering and exiting the patient room



# Outcome Measures

- Percentage of beds with ABHR available (for each patient)
- Percentage of staff that prompted patients to perform HH
- Percentage of patients performing HH
- Rate of HAIs on pilot unit
- Percentage of hospital units participating



# Alcohol Based Hand Rub (ABHR)

- Several ABHR delivery products were trialed and many were found to be inappropriate:
  - difficult to open
  - used after the meal
  - difficult to secure to tables
- To ensure ease of access the ABHR holders were secured to the over-bed tables
- Housekeeping agreed to fill and clean on discharge
- If ABHR not appropriate, this was indicated clearly



# Staff Training and Education

An educational program was developed to include training for all disciplines on the team:

- Nurses to educate on admission and prompt before medication
- Nutrition Services to prompt before meals
- Volunteer Services to educate patients with the video, and assist with HH during meals
- Dieticians to reinforce as part of their consultation
- Pharmacists to message during medication review



# Staff Training and Education

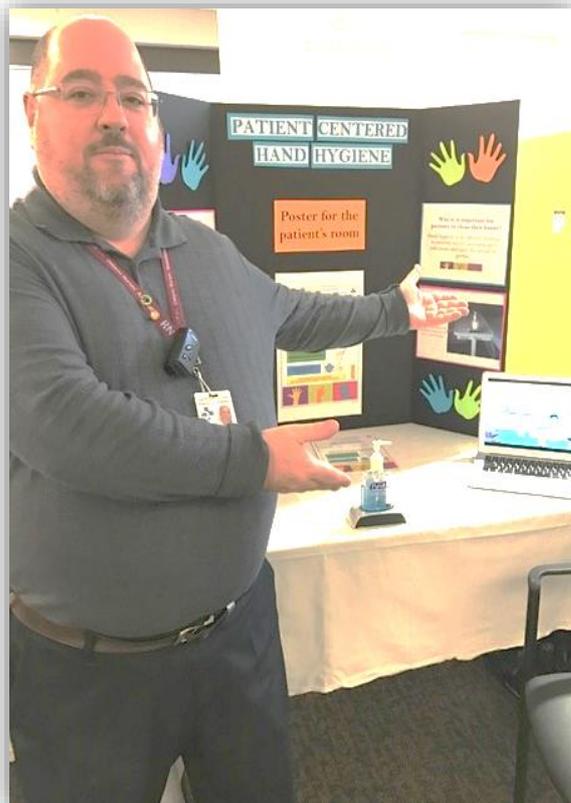
Training was provided to each team member:

- Volunteers role played scenarios with prompting, and practiced their education sessions with the iPad
- Nutritional services staff were given 1:1 training with a script
- Registered dietitians and pharmacists were given a script to include in their consult



# Corporate Education Strategies

- Added to the Hospital Quality Improvement Plan
- Education sessions were provided to:
  - Surgery and medicine departmental meetings
  - Nurse Manager Working Group
  - Pharmacy Council
  - Nurse Educator Open Forum
  - Unit staff meetings
  - Annual Nurse Education Training



# Workload

Workload was measured to determine impact:

- Time studies were completed with nutritional services to ensure delivery time was not impacted
- Pharmacists and registered dieticians were canvassed to determine impact on their workload
- Managers felt if they were given the communications tools it was manageable
- Housekeeping offered to incorporate restocking and cleaning the holder on discharge only, to manage resources
- Managers felt nursing could include PCCH education within 24 hours of admission.



# Communication

- A corporate communication strategy was developed by the PCHH Committee
- Communications Department reviewed all material for readability and standardization

## Patient Poster

**IT'S SIMPLE. STAY SAFE. C'EST SIMPLE. PROTÉGEZ-VOUS. CLEAN YOUR HANDS! LAVÉZ-VOUS LES MAINS!**

Sometimes when patients are admitted to the hospital, they can get infections. These are called hospital-associated infections. Il peut arriver aux patients d'attraper une infection pendant leur séjour à l'hôpital. C'est ce qu'on appelle une infection nosocomiale.

**How can you protect yourself from hospital-associated infections? Cleaning your hands is the most important way to protect yourself. Comment pouvez-vous vous protéger des infections nosocomiales? Vous laver les mains est le meilleur moyen de vous protéger.**

**HOW SHOULD YOU CLEAN YOUR HANDS? COMMENT FAIRE POUR VOUS LAVES LES MAINS?**

Use soap and water / À l'eau et au savon **or** Use alcohol-based hand rub / Avec du désinfectant pour les mains à base d'alcool

**WHEN SHOULD YOU CLEAN YOUR HANDS? QUAND DEVIÉZ-VOUS LAVES LES MAINS?**

**AFTER USING THE TOILET / APRÈS ÊTRE ALLÉ AUX TOILETTES**

**BEFORE EATING OR TAKING PILLS / AVANT DE MANGER OU DE PRENDRE UNE PILULE**

**WHEN ENTERING AND EXITING YOUR ROOM / AVANT D'ENTRER DANS VOTRE CHAMBRE ET APRÈS EN ÊTRE SORTI**

## Staff Newsletter

**NEW INITIATIVE  
PATIENT CENTERED HAND HYGIENE**

**WHEN:** Fall 2015

**WHAT:** In order to improve patient safety, and provide patient centered care, TOH is implementing a new initiative to have health care providers teach/remind patients how and when to wash their hands

**WHY:** Hand hygiene is an effective strategy to prevent health care-associated infections (HAI) and limit the spread of germs, including germs that may be resistant to antibiotic treatment

**WHO:** A5 will be the first unit to implement this new initiative

**HOW:** When there is opportunity to do so, nurses, volunteers and dietary staff will offer education to patients on how and when to perform hand hygiene

**key messages that nurses should relay to patients:**

- Clean your hands after using the toilet
- Clean your hands before eating or taking pills
- Clean your hands when entering or exiting your room

## Video



## Hospital Newsletter

**RECHERCHES MÉDICALES**

**Le support à désinfectant incite le patient à participer à ses soins**

Un personnel hospitalier peut parfois se sentir impuissant. Ils ont mesuré au Canada et ont se laisser séduire par d'autres personnes. Mais ils peut pour un rôle important pour prévenir les infections et ne pas attendre une telle aide sans l'aide, performants dirigés au secteur A5 au Centre Chic.

L'équipe de Janet a lancé un projet pilote pour leur rendre un support à désinfectant sur la table de chevet des patients. Ils demandent depuis que les employés de nettoyer les patients au moment de se lever les mains avant de manger et de prendre des médicaments.

Le support à désinfectant sur la table de chevet du patient a été une étape importante de la table de chevet. «C'est un grand succès, généralement dirigés.

« Les employés d'entretien ménager nous aident énormément et le fait de respecter les protocoles des mains est devenu notre secteur, mais il est possible de faire mieux. »

« Les employés d'entretien ménager nous aident énormément et le fait de respecter les protocoles des mains est devenu notre secteur, mais il est possible de faire mieux. »

D'autres unités de l'hôpital ont entendu la conversation et se sont intéressés au lancement du projet. L'équipe a aussi tenté de rendre les tables de chevet pour que les patients puissent se laver les mains avant de manger et de prendre des médicaments.

Janet le prévient, même Janet, les patients sont contents d'avoir un désinfectant à portée de main et la possibilité de se protéger. Les employés d'entretien ménager nous aident énormément et le fait de respecter les protocoles des mains est devenu notre secteur, mais il est possible de faire mieux. »

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**MISE EN ŒUVRE**

**MISE SUR TON ÉQUIPE**

**MISONS PCI**

**REMERCIEMENTS**



# Poster

- Displayed in the patient room
- Copies of the poster distributed on pilot unit

The Ottawa Hospital  
L'Hôpital d'Ottawa

**IT'S SIMPLE. STAY SAFE.  
C'EST SIMPLE. PROTÉGEZ-VOUS.  
CLEAN YOUR HANDS!  
LAVEZ-VOUS LES MAINS!**

**HOW TO CLEAN YOUR HANDS  
COMMENT VOUS LAVER LES MAINS**

Use soap and water **OR** Use alcohol-based hand rub  
À l'eau et au savon **OU** Avec du désinfectant pour les mains à base d'alcool

**WHEN SHOULD YOU CLEAN YOUR HANDS?  
QUAND DEVEZ-VOUS VOUS LAVER LES MAINS?**

**AFTER USING THE TOILET  
APRÈS ÊTRE ALLÉ AUX TOILETTES**

**BEFORE EATING OR TAKING PILLS  
AVANT DE MANGER OU DE  
PRENDRE UNE PILULE**

**WHEN ENTERING AND EXITING YOUR ROOM  
EN ENTRANT DANS VOTRE CHAMBRE ET APRÈS EN ÊTRE SORTI**



# Hospital Newsletter

- This newsletter was distributed to all 14, 000 staff
  - highlighting the launch of the pilot
  - Showcasing Volunteer Services contribution

“We’ve been so focused on how we can protect our patients, but part of it is helping people protect themselves as well.” Janet Hanson Unit Manager

**PRÉVENTION DES INFECTIONS**

## Le support à désinfectant incite le patient à participer à ses soins

Une personne hospitalisée peut parfois se sentir impuissante. Elle est malade ou blessée et doit se laisser soigner par d'autres personnes.

Mais elle peut jouer un rôle important pour prévenir les infections et ne pas empirer son état, selon Janet Hanson, gastrologue clinique au secteur A1 au Campus Chic.

L'équipe de Janet a lancé un projet-pilote pour faire installer un support à désinfectant sur la table de chevet des patients. Elle demande depuis aux employés de renseigner les patients sur l'importance de se laver les mains avant de manger et de prendre des médicaments.



« Nous avons beaucoup mis l'accent sur la façon de protéger les patients, mais il faut aussi les aider à se protéger eux-mêmes », conclut-elle. [1](#)

leurs soins », explique Jenn Fitzpatrick, éducatrice, Prévention et contrôle des infections, et responsable des initiatives d'hygiène des mains.

Même si l'équipe cherche toujours le meilleur façon de présenter le désinfectant aux patients, Janet montre aux bénévoles comment renseigner les patients sur l'hygiène des mains. Les bénévoles collaborent avec les employés pour inciter les patients à se laver les mains.

Le projet ne peut pas encore être lancé dans l'ensemble de l'hôpital parce que l'équipe est encore à recueillir des données, mais bien des unités qui cherchent à réduire les taux d'infections s'intéressent davantage à l'hygiène des mains.

Jusqu'à présent, estime Janet, les patients sont contents d'avoir un désinfectant à portée de main et la possibilité de se protéger. Les employés

estiment que c'est une façon simple d'encourager l'hygiène des mains.

« Nous avons beaucoup mis l'accent sur la façon de protéger les patients, mais il faut aussi les aider à se protéger eux-mêmes », conclut-elle. [1](#)



Janet Fitzpatrick à droite, éducatrice, Prévention et contrôle des infections, morte au Sédentaire Gal Jones à gauche) et Shylaz Ali comment renseigner les patients sur l'hygiène des mains.

INSPIRÉ PAR LA RECHERCHE. GUIDÉ PAR LA COMPASSION. 13

# Unit Newsletter

- For managers
  - sent to all unit staff
  - Posted in staff rooms and common areas on the unit

## NEW INITIATIVE

### PATIENT CENTERED HAND HYGIENE

**WHEN:** Fall 2015

**WHAT:** In order to improve patient safety, and provide patient centered care, TOH is implementing a new initiative to have health care providers teach/remind patients how and when to wash their hands

**WHY:** Hand hygiene is an effective strategy to prevent health care-associated infections (HAI) and limit the spread of germs, including germs that may be resistant to antibiotic treatment

**WHO:** A5 will be the first unit to implement this new initiative

**HOW:** When there is opportunity to do so, nurses, volunteers and dietary staff will offer repeated education to patients on how and when to perform hand hygiene

#### Three key messages that nurses should relay to patients:

- Clean your hands after using the toilet
- Clean your hands before eating or taking pills
- Clean your hands when entering or exiting your room



# Video



# Patient and Staff Engagement

## Staff

- Provided feedback on posters and communication

## Patient:

- Unit Manager surveyed patients for the design of the poster
- Active member on the PCHH Committee
- The Patient and Family Advisory Committee receives updates regularly and review and provide feedback on the tools and communication



# Manager Toolkit

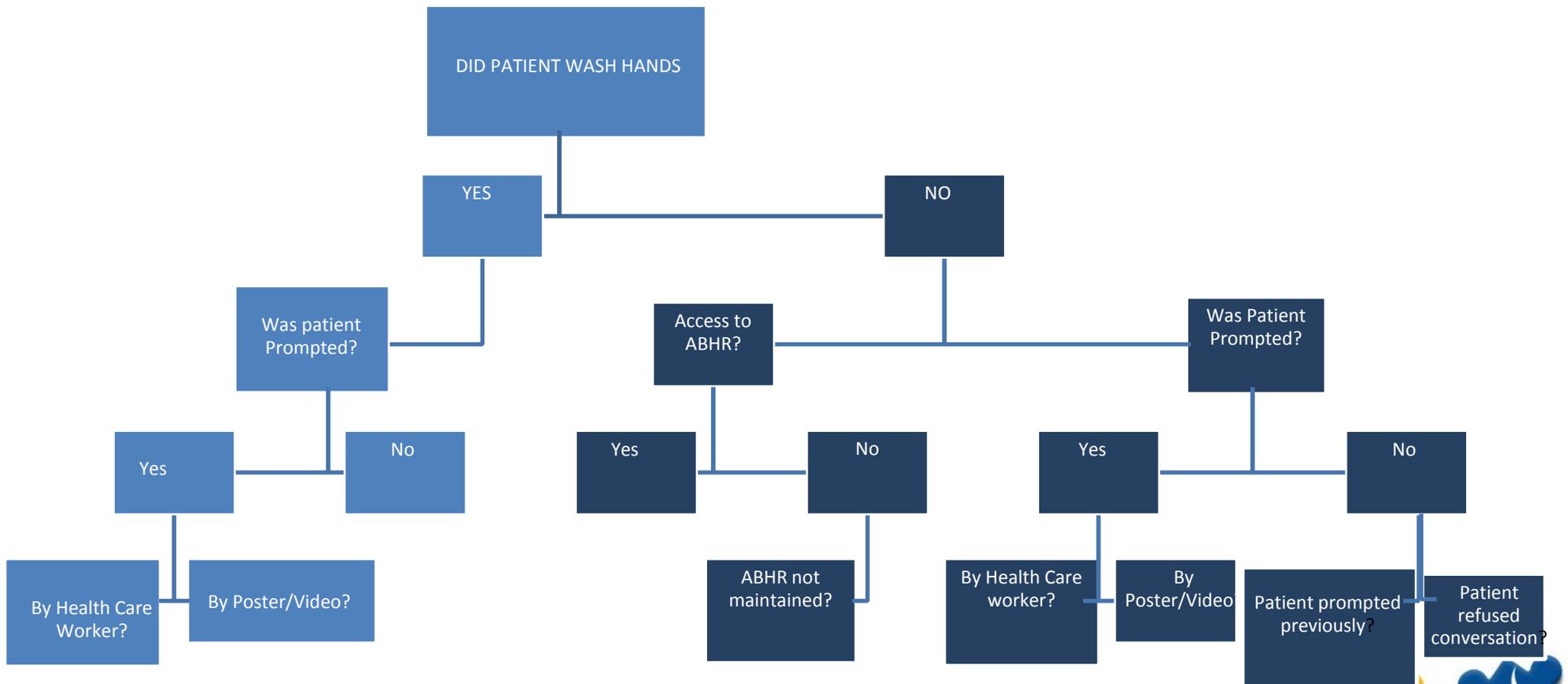
Managers were provided with:

- Checklist and project plan
- Ordering information for the ABHR and holders
- Newsletter to announce the “launch” to distribute to all staff

- Order enough bottles and holders for each over-bed table from TOH inventory
  - smaller bottle format (236 ml bottle) #612005 12/cs (fig. 1)
  - classic holder #612410 12/cs (fig. 2)
- Place holders in a location that easily accessible for the patient and where there is ample room for items such as the meal tray to be placed. A suggested location is identified in fig. 3.
- Notify Facilities to have classic holders fixed to the over-bed table (using silicone).



# Initial Auditing Process Map



# Electronic Auditing

Room Audit

Resize font: + | -

[Survey Queue](#)

Please complete the survey below.  
Thank you!

**A5 Room Number**  
\* must provide value

A534

**Audit Event**  
\* must provide value

Noon Medications

**Was ABHR available?**  
\* must provide value

Yes  
 No

reset

**Did patient perform hand hygiene?**  
\* must provide value

Yes  
 No

reset

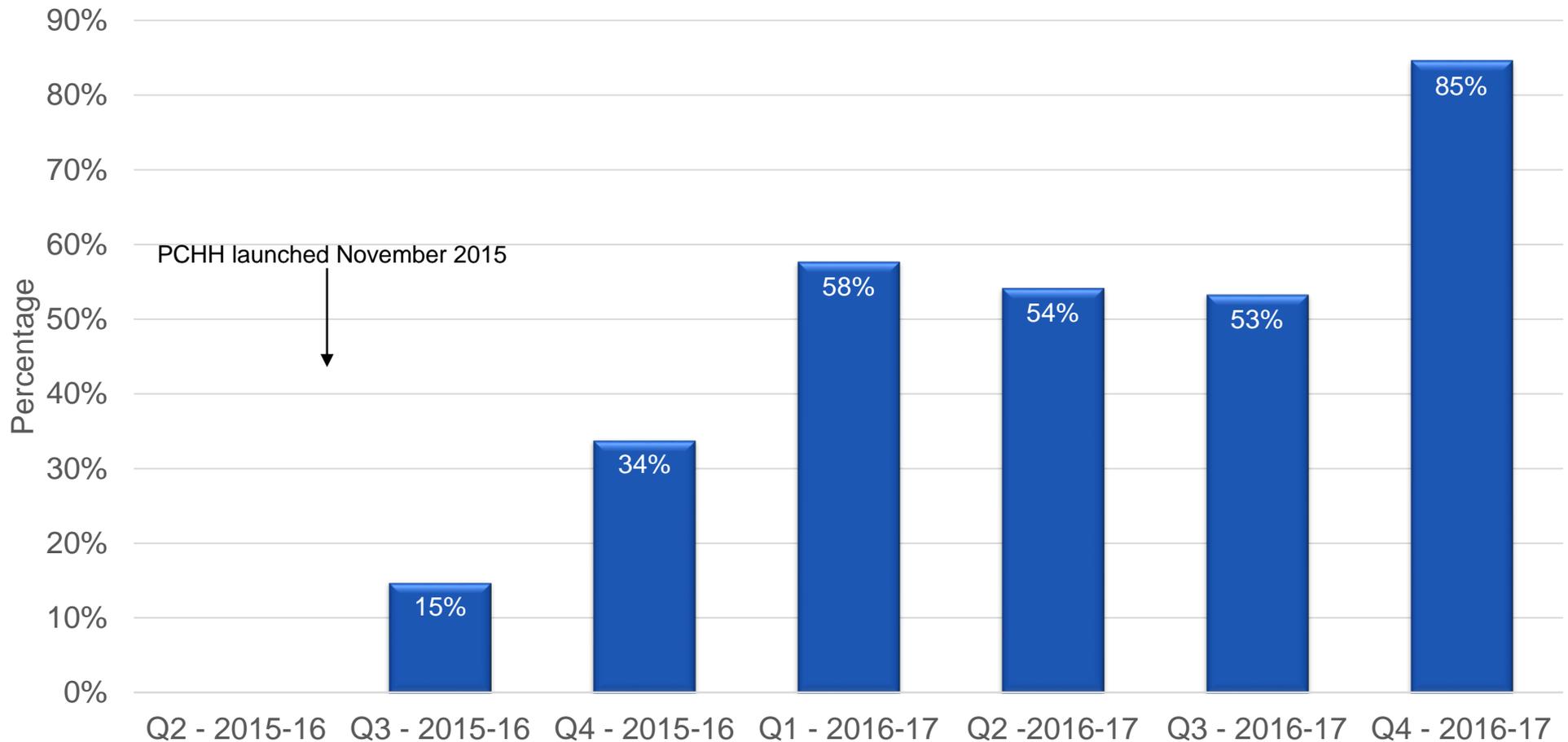
**Why was Hand Hygiene not performed?**  
\* must provide value

Submit

Patient was physically or cognitively unable  
Patient was unaware of HH practices  
Patient was aware but does not believe in HH (Refused)  
Patient was aware but forgot  
Unknown (Other Reasons)



# Pilot Unit Patient Hand Hygiene Audit Results



# Electronic Auditing Data Results

QTR	# HH Performed	# Observations	Percentage # Compliance
2016-17 Q1	37	64	57.8%
2016-17 Q2	44	81	54.0%
2016-17 Q3	39	73	53.4%
2016-17 Q4	11	13	84.6%
Total	131	231	62.5%



# Reason for Not Performing HH at The Four PCHH Moments

QTR	Missed Opportunity	Patient was aware of PCHH but refused	Patient aware but forgot	Patient physically or cognitively unable	Patient unaware of PCHH	Unknown
2016-17 Q1	27	2	8	7	6	4
2016-17 Q2	37	1	12	10	1	13
2016-17 Q3	34	3	7	10	0	4
2016-17 Q4	2	0	0	1	0	1
<b>Total</b>	<b>100</b>	<b>6</b>	<b>27</b>	<b>28</b>	<b>7</b>	<b>22</b>

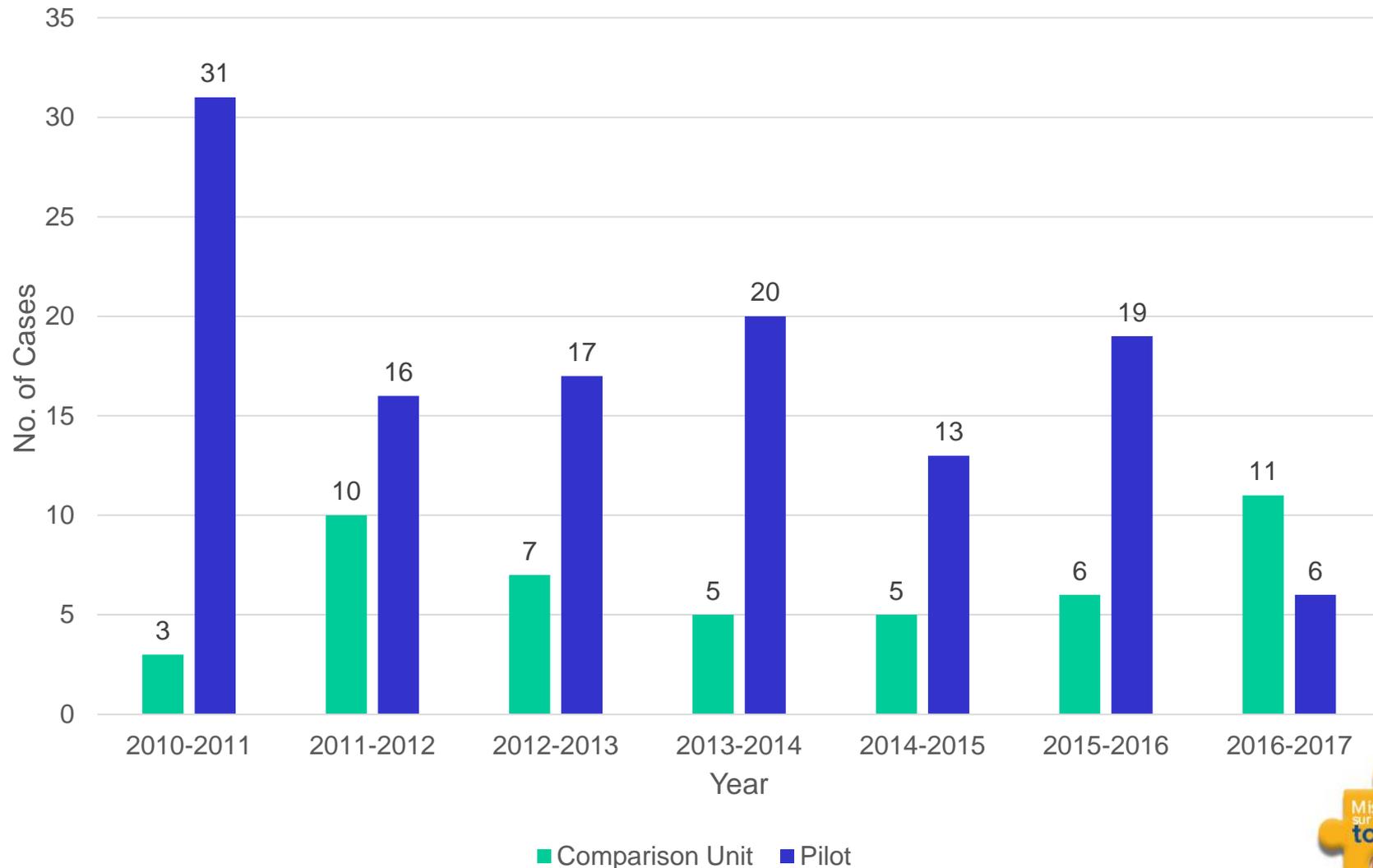


# ABHR Availability on The Pilot Unit

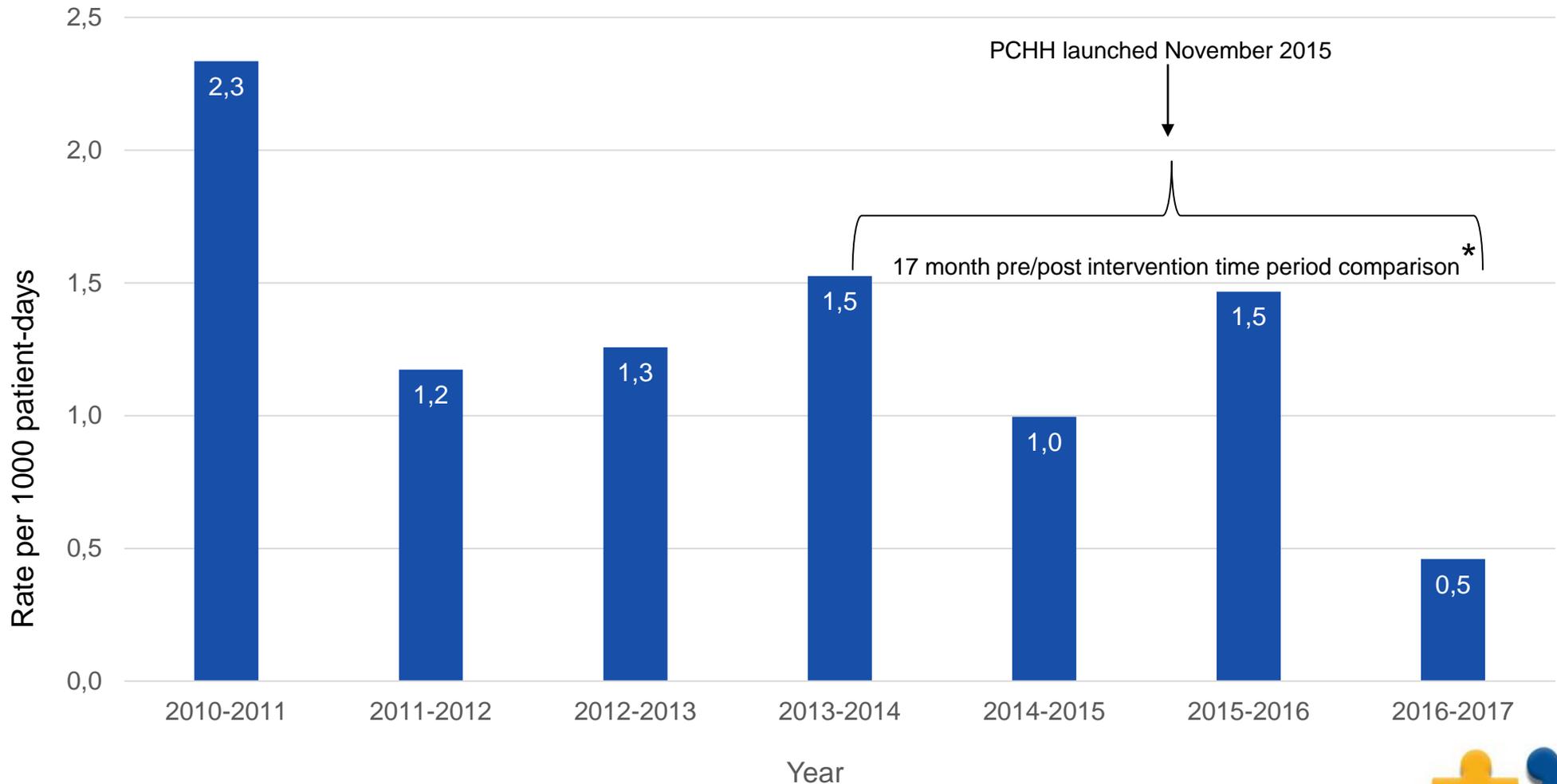
QTR	#ABHR/# observations (%)
2016-17 Q1	60/64 (93.8%)
2016-17 Q2	68/81 (84.0%)
2016-17 Q3	60/73 (62.2%)
2016-17 Q4	13/13 (100%)
Total	201/231 (90.0%)



# Number of MRSA Cases per Year Pilot Unit and Comparison Unit



# Pilot Unit MRSA Rate per 1000 patient-days 2010-2017



\* chi-squared test the p-value is 0.073 significant at 0.1



# Outcome Results

- PCCH Program have been rolled out on 65% acute care units with the goal to be 100% August 2017
- Committee has been expanded





# PCHH Provided Throughout The Patient Journey

Patient receives education from Nursing within 24 hours of admission

Prompted about HH at meal time by Nutrition Services

Clinical Manager rounding

Volunteers provide education and give reminders

Pharmacist and assistants educate during consult

Registered Dietician assistants educate during consult



# Our Next Steps

- Managers intend to survey patients if they received PCHH education
- Transport workers to offer ABHR to the patient when leaving the patient room
- Develop a physician PCHH engagement plan



# Our Next Steps

- Focus on strategies to address patients that are not able to perform hand hygiene on their own
- Balance workload of audits on pilot with initiative to spread to other units
- Study HCW and patient attitudes and beliefs about PCHH



# Our Lessons Learned

- A PCCH program may be associated with decrease in HAI rates
- Multidisciplinary team with multimodal strategies leads to success in quality work and patient safety, without the need for additional resources
- Including patients is not only patient-centred care but enhances success and enriches the experience



# Our Lessons Learned

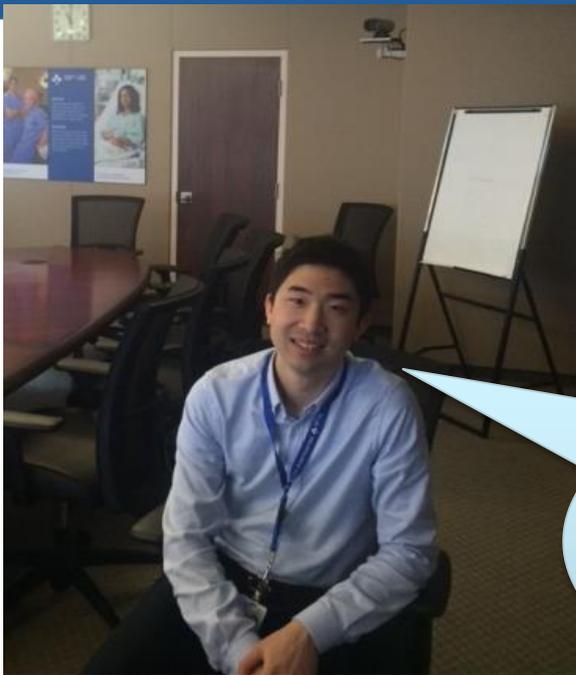
- Detailed auditing processes can make measurement difficult
- Meet frequently, measure often and alter as needed
- Do not give up!



# Future Considerations

- PCHH programs appear to be beneficial though further studies are needed to identify the effective elements (product, moments, education, auditing)
- Patient safety organizations such as CPSI, CDC, WHO must develop guidelines for patient centred hand hygiene programs
- Few programs nationwide. Sharing experiences and materials may facilitate this



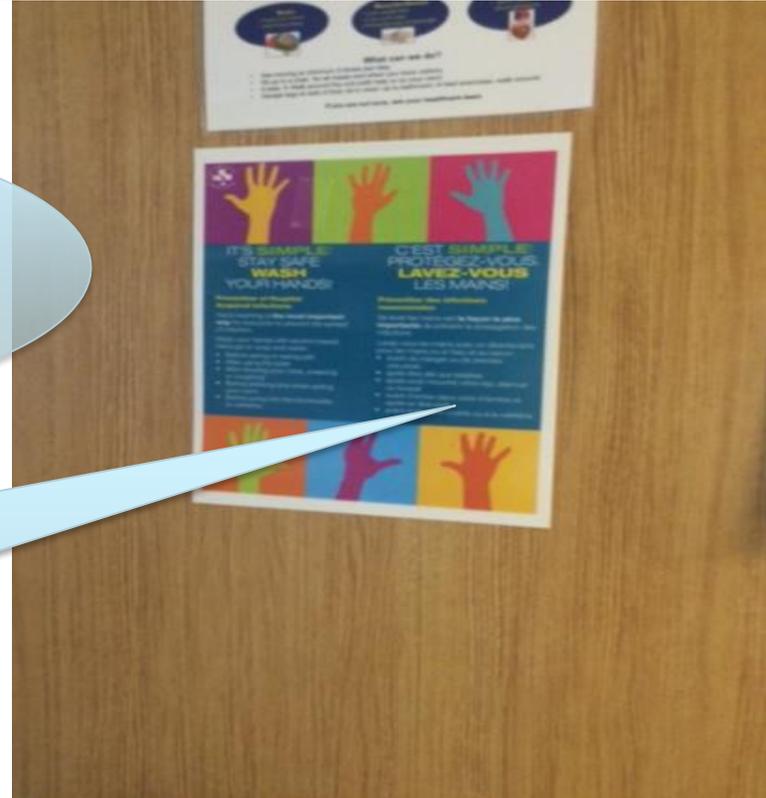


**Clinical Nurse Manager,  
Janet Hanson**  
It is awareness, it is excellent, putting the focus on the patient. It is a good start, but we have a long way to go”.

**Caleb from Quality:** “Having a dedicated multidisciplinary team focusing on patient safety is what drove this project from a concept then inception to now actually having an impact on the patients’ lives.”



**Carol from Nutrition Services:**  
“It is great to be part of the team and be recognized for my contribution’



**Patient (Bob) in room 564:** “oh yes, this team takes good care of me, they even remind me when I forget to clean my hands”



# Acknowledgements

- The Ottawa Hospital IPAC Program
- Dr. K. Suh, IPAC Medical Director
- Janet Hanson, Clinical Manager
- Caleb Hui, TOH Quality Coordinator
- Denise Hawkins, Volunteer Services
- Lizanne Beique, TOH Pharmacist
- Ann Rivet, Nutritional Services Coordinator
- Jocelyn Tufts, TOH Methodologist



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